

Sony Ericsson

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Abstract

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The present invention generally relates to the field of automatic power control (APC) circuitries used in the analog front end of a mobile transmitter. It particularly refers to a power control circuitry (101M, 101N) and a corresponding method for controlling the power level (P_{out}) of an RF signal ($x(t)$) to be transmitted at the output port of a variable-gain power amplifier (105) by performing an additional regulation of the APC loop's reference signal (V_{ref}). Thereby, it is proposed to increase the radiated RF power (P_{out}) in case a transmitting antenna (110) is mismatched to said power amplifier (105) in order to not release an ongoing call. In case there is a subject very close to the terminal antenna, the antenna load is changed and the increased reflected signal is measured. In a closed loop this increased re-

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flected signal is mixed with a reference ramp signal (V_{ramp}) which is used to calculate (S1A) a reference signal (V_{ref}) representing the nominal power level (P_{ref}) for the power (P_{out}) of the RF signal ($x(t)$) to be transmitted, which leads to an increasing of the radiated power and prevents said call from being released.

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The step of calculating (S1A) the reference signal (V_{ref}) as a function of the reference ramp signal (V_{ramp}) and a DC feedback signal (V_{PD}) is realized by the substeps of multiplying (S1a') a processed version ($K \cdot G_{OP} \cdot V_{PD}$) of the DC feedback signal (V_{PD}) by the reference ramp signal (V_{ramp}) and adding (S1a'') the output signal ($V_{ramp} \cdot K \cdot G_{OP} \cdot V_{PD}$) of the multiplication step (S1a') to the reference ramp signal (V_{ramp}), thereby yielding said reference signal (V_{ref}).

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(Figs. 3b+c)